

Notice of Allowability

Application No.

10/025,868

Examiner

R. Stephen Dildine

Applicant(s)

VIEREGGE ET AL.

Art Unit

2133

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Amendment A, 18 January 2005.
2. ☒ The allowed claim(s) is/are 1, 3, 5, 9-13, 17-19, 21-22 and 24-30.
3. ☒ The drawings filed on 26 December 2001 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☐ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____


R. Stephen Dildine

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Applicants' amendment filed 18 January 2005 fails to comply with Rules 121(c) and 126, which state:

§ 1.121 Manner of making amendments in applications.

- (c) Claims. Amendments to a claim must be made by rewriting the entire claim with all changes (e.g., additions and deletions) as indicated in this subsection, except when the claim is being canceled. Each amendment document that includes a change to an existing claim, cancellation of an existing claim or addition of a new claim, must include a complete listing of all claims ever presented, including the text of all pending and withdrawn claims, in the application. The claim listing, including the text of the claims, in the amendment document will serve to replace all prior versions of the claims, in the application. In the claim listing, the status of every claim must be indicated after its claim number by using one of the following identifiers in a parenthetical expression: (Original), (Currently amended), (Canceled), (Withdrawn), (Previously presented), (New), and (Not entered).
- (1) Claim listing. All of the claims presented in a claim listing shall be presented in ascending numerical order. Consecutive claims having the same status of "canceled" or "not entered" may be aggregated into one statement (e.g., Claims 1-5 (canceled)). The claim listing shall commence on a separate sheet of the amendment document and the sheet(s) that contain the text of any part of the claims shall not contain any other part of the amendment.
- (2) When claim text with markings is required. All claims being currently amended in an amendment paper shall be presented in the claim listing, indicate a status of "currently amended," and be submitted with markings to indicate the changes that have been made relative to the immediate prior version of the claims. The text of any added subject matter must be shown by underlining the added text. The text of any deleted matter must be shown by strike-through except that double brackets placed before and after the deleted characters may be used to show deletion of five or fewer consecutive characters. The text of any deleted subject matter must be shown by being placed within double brackets if strike-through cannot be easily perceived. Only claims having the status of "currently amended," or "withdrawn" if also being amended, shall include markings. If a withdrawn claim is currently amended, its status in the claim listing may be identified as "withdrawn— currently amended."
- (3) When claim text in clean version is required. The text of all pending claims not being currently amended shall be presented in the claim listing in clean version, i.e., without any markings in the presentation of text. The presentation of a clean version of any claim having the status of "original," "withdrawn" or "previously presented" will constitute an assertion that it has not been changed relative to the immediate prior version, except to omit markings that may have been present in the immediate prior version of the claims of the status of "withdrawn" or "previously presented." Any claim added by amendment must be indicated with the status of "new" and presented in clean version, i.e., without any underlining.

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- (4) When claim text shall not be presented; canceling a claim.
 - (i) No claim text shall be presented for any claim in the claim listing with the status of "canceled" or "not entered."
 - (ii) Cancellation of a claim shall be effected by an instruction to cancel a particular claim number. Identifying the status of a claim in the claim listing as "canceled" will constitute an instruction to cancel the claim.
- (5) Reinstatement of previously canceled claim. A claim which was previously canceled may be reinstated only by adding the claim as a "new" claim with a new claim number.

§ 1.126 Numbering of claims.

The original numbering of the claims must be preserved throughout the prosecution. When claims are canceled the remaining claims must not be renumbered. When claims are added, they must be numbered by the applicant consecutively beginning with the number next following the highest numbered claim previously presented (whether entered or not). When the application is ready for allowance, the examiner, if necessary, will renumber the claims consecutively in the order in which they appear or in such order as may have been requested by applicant. [32 FR 13583, Sept. 28, 1967; revised, 62 FR 53131, Oct. 10, 1997, effective Dec. 1, 1997] and therefore has not been entered.

The application has been amended as follows:

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WE CLAIM

1 (Currently amended) A method of performing protection switching in a communications network, the method comprising:

a) on an ongoing basis, providing forward error correction (FEC) coding for data transmitted on the communications network and monitoring a raw bit error rate (BER) determined prior to performing the error correction based on the FEC coding in respect of a first path through the communications network;

b) on an ongoing basis, determining a first order derivative of said raw BER based on at least one previous raw BER and a current raw BER;

(c) determining a predicted raw BER at a next time interval based on the current BER and said first order derivative; and

d) comparing the predicted BER with a predetermined threshold, and if the predicted raw BER is exceeding the threshold, instigating a switch to a protection path through the network.

2 (Canceled)

3 (Currently amended) A method according to claim 1 wherein the first path is a path for a wavelength channel through an optical network.

4 (Canceled)

5 (Currently Amended) A method according to claim 1 wherein the step (c) comprises determining if the predicted BER crosses two thresholds within a time shorter than a predetermined time.

6 (Canceled)

7 (Canceled)

8 (Canceled)

9 (Currently amended) A method according to claim 1 wherein the protection path is a path available for a wavelength channel.

10 (Original) A method according to claim 1 wherein the protection path is a dedicated path for the first path.

11 (Original) A method according to claim 1 wherein:

instigating a switch to a protection path through the network is done for higher priority traffic before being done for lower priority traffic.

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12 (Currently amended) A method according to claim 1 wherein the raw BER measure in respect of the first path through the communications network comprises a BER measurement for each of the light paths making up the first path.

13 (Currently amended) A method according to claim 1 further comprising making connection routing decisions for new connection requests taking into consideration raw bit error rates collected for the network in a manner which encourages the use of links/paths with good raw BER over links/paths with poor raw BER.

14 (Canceled)

15 (Canceled)

16 (Canceled)

17 (Currently amended) A method of performing protection switching in an optical communications network, the method comprising:

a) on an ongoing basis, providing forward error correction (FEC) coding for data transmitted on the communications network and monitoring a raw bit error rate (BER) determined prior to performing the error correction based on the FEC coding in respect of a first light path between components in an optical communications network;

b) on an ongoing basis, determining a first order derivative of said raw BER based on at least one previously measured raw BER and a current raw BER;

(c) determining a predicted raw BER at a next time interval based on the current BER and said first order derivative; and

d) comparing the predicted BER with a predetermined threshold, and if the predicted raw BER is exceeding the threshold, instigating a switch to a protection link through the network, and switching at least one service from the first light path to the protection light path.

18 (Original) A method according to claim 17 wherein instigating a switch to the protection light path is done in a sequence based on priority of the services.

19 (Original) A method according to claim 17 further comprising making connection routing decisions for new connection requests taking into consideration raw bit error rates collected for the network in a manner which encourages the use of paths/light paths with good raw BER over paths/light paths with poor raw BER.

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20 (Canceled)

21 (Currently amended) A network node comprising: an input for receiving on an ongoing basis raw BER measurements in respect of a path through a network of which the network node forms a part; and a decision means adapted to, on an ongoing basis, to determine a first order derivative of said raw BER based on at least one previous raw BER and a current raw BER, to determine a predicted raw BER at a next time interval based on the current BER and said first order derivative, and to instigate a switch to a protection path through the network if the predicted raw BER is exceeding a threshold.

22 (Currently amended)

A network node according to claim 21 adapted for use in an optical network, wherein the first path is a path for a wavelength channel through an optical network.

23 (Canceled)

24 (Original) A network node according to claim 21 adapted to transmit traffic of differing priorities on said path, and adapted to instigate a switch to a protection path through the network for higher priority traffic before doing so for lower priority traffic.

25 (Original) A network node according to claim 21 wherein the raw BER measurements comprise a BER measurement for each link making up the first path.

26 (Original) A network node according to claim 21 further comprising:
a network routing component adapted to make connection routing decisions in respect of new connection requests, the network routing component being adapted to take into consideration the raw bit error rates collected for the network in a manner which paths/light paths with poor raw BER.

27. (New) A method as described in claim 1, wherein the step (b) further comprises determining a second order derivative of the raw BER based on the previously measured raw BERS and the current raw BER, and the step (c) comprises determining the predicted raw BER at the next time interval based on the current BER and said first and second order derivatives.

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28. (New) A method as described in claim 27, wherein the step (b) further comprises determining at least one third or higher order derivative of the raw BER based on the previously measured raw BERS and the current raw BER, and the step (c) comprises determining the predicted raw BER at the next time interval based on the current BER and said derivatives.

29. (New) A method as described in claim 17, wherein the step (b) further comprises determining a second order derivative of the raw BER based on the previously measured raw BERS and the current raw BER, and the step (c) comprises determining the predicted raw BER at the next time interval based on the current BER and said first and second order derivatives.

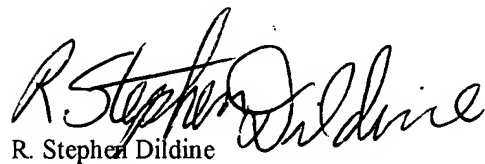
30. (New) A method as described in claim 29, wherein the step (b) further comprises determining at least one third or higher order derivative of the raw BER based on the previously measured raw BERS and the current raw BER, and the step (c) comprises determining the predicted raw BER at the next time interval based on the current BER and said derivatives.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to R. Stephen Dildine whose telephone number is (571) 272-3820. The examiner can normally be reached on M - F 5:30 am to 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Albert Decady can be reached on (571) 272-3819. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


R. Stephen Dildine

R. Stephen Dildine
Primary Examiner
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